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UNITED STATES DISTRICT COURT  
 NORTHERN DISTRICT OF CALIFORNIA  
 SAN JOSE DIVISION

SAMSUNG ELECTRONICS CO., LTD.

Plaintiff,

v.

BROADCOM INC., BROADCOM  
 CORPORATION, and AVAGO  
 TECHNOLOGIES INTERNATIONAL SALES  
 PTE. LIMITED,

Defendants.

Case No. 5:24-cv-03959

**PLAINTIFF’S COMPLAINT FOR  
 ANTITRUST VIOLATIONS OF §3 OF  
 THE CLAYTON ACT (EXCLUSIVE  
 DEALING AND TYING), §§1-2 OF THE  
 SHERMAN ACT (AGREEMENTS IN  
 RESTRAINT OF TRADE,  
 MONOPOLIZATION, ATTEMPTED  
 MONOPOLIZATION), AND  
 CARTWRIGHT ACT (EXCLUSIVE  
 DEALING AND TYING)**

**DEMAND FOR JURY TRIAL**

**COMPLAINT FOR VIOLATIONS OF  
THE CLAYTON ACT, SHERMAN ACT, AND CARTWRIGHT ACT**

Plaintiff Samsung Electronics Co., Ltd. (“Samsung”), by its undersigned counsel, hereby complains against Defendants Broadcom Inc., Broadcom Corporation, and Avago Technologies International Sales Pte. Limited (collectively, “Broadcom”) for violations of the Clayton Act § 3 (exclusive dealing and tying), Sherman Act §§ 1 and 2 (agreements in restraint of trade and maintenance of a monopoly or attempted monopolization), and the Cartwright Act (exclusive dealing and tying) as follows:

**NATURE OF ACTION**

1. Samsung manufactures smartphones, tablets, wearable devices (such as watches and earbuds), and other mobile devices used every day by millions of consumers and businesses throughout the United States.

2. Broadcom is the dominant supplier of critical electronic components for high-end mobile devices, including certain Bluetooth/Wi-Fi Chips, GNSS/GPS Chips, and one-module Mid/High LPAMiD components (collectively, hereinafter the “Critical Components”).

3. During the relevant time period, Broadcom supplied Samsung with almost all of its requirements of such components for use in its high-end Galaxy series smartphones tablets, and wearable devices (“Flagship Devices”).

4. For many years, the Parties had a stable commercial relationship. Since 2001 and until the events describe herein, all of Samsung’s purchases of the Critical Components from Broadcom were on a Purchase Order (“PO”) basis with no written contract. Samsung’s U.S. purchasing center, Samsung Electronics America, Inc., an affiliate of Plaintiff Samsung, typically issues a PO to Broadcom weekly.

5. In 2019, Samsung began to pursue a multi-sourcing strategy that would include procuring significant quantities of Critical Components from Broadcom’s competitors. Samsung’s strategy was intended to, among other things, create a more stable and diversified supplier base to mitigate commercial risks, and reduce costs for certain types of critical components that are necessary

1 inputs into Flagship Devices. If Samsung were able to successfully implement its multi-sourcing  
2 strategy, it could improve the quality and reduce the cost of its Flagship Devices while improving  
3 its ability to assure supply by mitigating component shortages, all to the benefit of consumers and  
4 competition.

5 6. While Samsung's multi-sourcing strategy would be good for Samsung, good for  
6 consumers, and good for competition, it would not be good for Broadcom, which would lose sales  
7 and profits as Samsung increased purchases from Broadcom's competitors. Determined to maintain  
8 its dominance in the markets for the Critical Components, when Broadcom became aware of  
9 Samsung's dual sourcing strategy, Broadcom did not respond by offering better prices or otherwise  
10 competing on the merits. Instead, in order to prevent Samsung from acquiring Critical Components  
11 from its competitors, Broadcom retaliated against Samsung by cutting off supply and refusing to  
12 fulfill Samsung's POs or provide technical support, threatening Samsung's ability to deliver  
13 Flagship Devices as it ran short on the Critical Components required to manufacture and sell  
14 Flagship Devices.

15 7. Broadcom expressly and anticompetitively refused to restart shipments and threatened  
16 to terminate the Parties' entire commercial relationship unless Samsung agreed to enter into a long-  
17 term contract pursuant to which Samsung would purchase all of its Critical Components for Flagship  
18 Devices from Broadcom. Without any alternative source for all of the Critical Components it  
19 sourced from Broadcom, and facing the destruction of its multi-billion dollar business selling  
20 Flagship Devices, Samsung had no choice but to enter into the agreement demanded by Broadcom,  
21 which was documented in the Strategic Agreement effective as of January 1, 2021 by and between  
22 Samsung Electronics Co., Ltd., Broadcom Corporation, and Broadcom's subsidiary Avago  
23 Technologies International Sales, Pte., Ltd.

24 8. The minimum purchase commitments of the Strategic Agreement are a "take or pay"  
25 requirement. Even if Samsung bought Critical Components from a competitor of Broadcom,  
26 Samsung was nevertheless required to pay Broadcom as if it had purchased those Critical  
27 Components from Broadcom itself. Paying twice for the same component -- paying Broadcom's  
28 competitor for the component and paying Broadcom under the "take or pay" -- was not economically

1 viable given Samsung's need to minimize its costs in order to compete in the exceptionally  
2 competitive markets in which it sells its Flagship Devices. As such, the Strategic Agreement  
3 functioned as a de facto exclusive dealing agreement.

4 9. The Strategic Agreement was also a de facto tying arrangement: by imposing a  
5 minimum purchase commitment on Samsung and threatening to terminate the parties' entire  
6 commercial relationship if Samsung did not agree to purchase all of its Critical Components from  
7 Broadcom, Broadcom leveraged its monopoly power in certain Critical Components to force  
8 Samsung to purchase other Critical Components. Specifically, in order to meet the minimum  
9 purchase commitment, Samsung was forced to purchase not only the Critical Components for which  
10 Broadcom was the only viable supplier, but also the Critical Components offered by other suppliers,  
11 and that Samsung preferred to buy from another supplier.

12 10. Broadcom has used the exclusive dealing arrangement and the tying arrangement  
13 described herein to maintain its monopoly and unlawfully restrain competition in several relevant  
14 markets, in violation of the Clayton Act § 3, Sherman Act §§ 1 and 2, and California Business and  
15 Professions Code §§ 16720 and 16727. As a direct and foreseeable result (indeed, as the desired  
16 effect) of Broadcom's anticompetitive conduct, Samsung was foreclosed from purchasing Critical  
17 Components from alternative suppliers and Broadcom's competitors were foreclosed from selling  
18 to Samsung. The exclusion of competing suppliers has resulted in substantially less competition,  
19 higher prices, and decreased product quality.

20 11. The Korea Fair Trade Commission (KFTC) has conducted an in-depth investigation  
21 of the Broadcom conduct directed against Samsung described in this Complaint. On October 6,  
22 2023 the KFTC issued Decision No. 2023-153 finding that Broadcom's conduct described in this  
23 Complaint violated Korean antitrust law and imposing a fine of KRW 18.664 billion on Broadcom.

24 12. Broadcom is a repeat antitrust violator. Samsung is not the first victim of Broadcom's  
25 anticompetitive tactics to obtain exclusivity. Indeed, Broadcom engaged in the anticompetitive  
26 conduct alleged herein *at the very same time* it was being investigated by the U.S. Federal Trade  
27 Commission, European Commission, and Korea Fair Trade Commission for similar conduct and *at*  
28 *the very same time* it was settling the Federal Trade Commission and European Commission

1 investigations by agreeing not to engage in anticompetitive of the type Broadcom used against  
2 Samsung and its suppliers here.

3 13. The U.S. Federal Trade Commission investigated and challenged Broadcom's  
4 coerced exclusive dealing arrangements with manufacturers of set top boxes and with cable TV  
5 service providers. As alleged in the FTC's Complaint, Broadcom threatened its customers that they  
6 would receive unfavorable pricing, technology access, product allocation, delivery lead teams, and  
7 other support if they did not agree to buy exclusively or near-exclusively from Broadcom. In  
8 conduct that mirrors Broadcom's conduct challenged in this Complaint, the FTC alleged that "when  
9 an OEM that did not yet have an exclusive agreement with Broadcom submitted a bid to a Service  
10 Provider using a non-Broadcom component, Broadcom responded by cutting off all supply and  
11 support to that OEM and announcing significantly increased prices. As a result, and in order to  
12 reverse these adverse actions, the OEM withdrew its bid for that Service Provider opportunity. Also  
13 as a result of these actions, it entered an exclusive agreement with Broadcom." Complaint ¶ 40, *In*  
14 *re Broadcom Inc.*, Docket No. C-4750 (filed June 29, 2021).

15 14. The FTC's challenge was resolved by a consent decree pursuant to which Broadcom  
16 was ordered, *inter alia*, to cease and desist from conditioning the sale, pricing, or support for certain  
17 components upon an agreement to purchase more than half the customer's requirements for that  
18 product or another product from Broadcom, breaching agreements with customers in order to coerce  
19 purchases, and threatening to terminate, suspend, or delay shipments to customers that did not agree  
20 to buy more than half of their requirements of specified components from Broadcom. Decision and  
21 Order, *In re Broadcom Inc.*, Docket No. C-4750 (Nov. 4, 2021).

22 15. The European Commission concluded that Broadcom's conduct in demanding  
23 exclusivity from set-top box makers was so egregious that it imposed interim measures (effectively  
24 a preliminary injunction) banning Broadcom from continuing its anticompetitive conduct while the  
25 EC's investigation proceeded. This was the first time in twenty years that the EC imposed interim  
26 measures. The EC entered into a settlement with Broadcom in October 2020 pursuant to which  
27 Broadcom agreed not to engage in the type of conduct challenged in this lawsuit (albeit only with  
28

1 respect to the types of chips the EC was investigating, which are different than those at issue in this  
2 Complaint).

3 16. The Korea Fair Trade Commission opened an investigation of Broadcom's conduct  
4 relating to set top boxes in 2018 that remains open.

5 **PARTIES**

6 17. Plaintiff Samsung is a Korean multinational electronics company headquartered in  
7 Suwon, South Korea. It is one of the largest global manufacturers of mobile phones, smartphones,  
8 tablets, and other connected devices like smartwatches.

9 18. Defendant Broadcom Inc. is an American semiconductor and infrastructure software  
10 company headquartered in San Jose, California. Broadcom Inc. sells a wide variety of  
11 semiconductor products for the wireless and broadband communications industries, including  
12 connectivity and navigation components used in smartphones, tablets, and other connected devices.  
13 Broadcom, Inc. has acted through its controlled subsidiaries including Defendant Broadcom  
14 Corporation, Defendant Avago Technologies International Sales PTE Limited, and Avago  
15 Technologies Korea Co., Ltd., but in all cases the conduct alleged herein has been undertaken at the  
16 direction of Broadcom Inc.

17 19. Defendant Broadcom Corporation is an indirect wholly-owned subsidiary of  
18 Broadcom, Inc. headquartered in San Jose, California. Broadcom Corporation describes itself as "a  
19 global leader and innovator in semiconductor solutions for wired and wireless communications."  
20 Broadcom Corporation is a party to the anticompetitive Strategic Agreement imposed upon  
21 Samsung described herein.

22 20. Defendant Avago Technologies International Sales Pte. Ltd., also known as  
23 Broadcom Singapore, is an indirect wholly-owned subsidiary of Broadcom Inc. Avago  
24 Technologies International Pte. Ltd. is a party to the anticompetitive Strategic Agreement imposed  
25 upon Samsung described herein.

**JURISDICTION AND VENUE**

21. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1337(a), because this action arises under Sections 3, 4 and 16 of the Clayton Act, 15 U.S.C. §§ 14, 15 and 26, as well as Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2.

22. This Court has personal jurisdiction over each defendant pursuant to Section 12 of the Clayton Act, 15 U.S.C. § 22, because each may be found and transacts business in the State of California. This Court also has personal jurisdiction over each defendant because, *inter alia*, Defendants Broadcom Inc. and Broadcom Corporation are headquartered in San Jose, California, and because Defendant Avago Technologies International Sales Pte. Ltd. has purposefully availed itself of the privilege of conducting activities in the State of California with respect to this dispute including, without limitation, by entering into the Strategic Agreement along with its affiliate Broadcom Corporation, which agreement expressly provides that it “shall be governed by and construed in accordance with the laws of the State of California . . . as if performed wholly within the state . . . .”

23. Venue is proper in this District because all defendants transact business in this District and may be found in this District, as defined by 15 U.S.C. § 22. Venue is also proper in this District under 28 U.S.C. § 1391(b)(1) and (c)(2) because Broadcom Inc. and Broadcom Corporation are headquartered in San Jose, California, and because Avago Technologies International Sales Pte. Ltd. is subject to personal jurisdiction with respect to this action for the reasons stated above. Alternatively, venue is proper in this District under 28 U.S.C. § 1391(b)(2) because a substantial part of the events or omissions giving rise to the claims alleged herein occurred, or a substantial part of the property that is the subject of this action is situated, in this District, or under 28 U.S.C. § 1391(b)(3) because Broadcom Inc. and Broadcom Corporation are subject to personal jurisdiction in this District.

**FACTS COMMON TO ALL COUNTS**

**A. The Relevant Markets and Broadcom’s Market Power in those Markets**

24. Samsung sources several types of relevant Critical Components from Broadcom for use in its high-end Flagship Devices. The specific Flagship Devices at issue here are the Galaxy S

1 and Galaxy Note series of smartphones and tablets. Each of these smart devices contains the latest  
 2 Bluetooth and Wi-Fi connectivity technology, and other top-of-the line features like an organic  
 3 light-emitting diode (“OLED”) display and multiple rear and front cameras. Critical components  
 4 are also used in Samsung’s Buds Live earbuds.

5 25. As described in detail below, the relevant markets for analyzing the antitrust violations  
 6 committed by Broadcom are the global markets for the sale of certain types of connectivity and  
 7 radio frequency front-end components suitable for use in Samsung’s Flagship Devices and  
 8 competitors to those Flagship Devices sold by Samsung’s competitors such as Apple, LG, Google,  
 9 HTC, and others. These markets are the global markets for: (i) standalone Bluetooth/Wi-Fi  
 10 combination chips for high-end smartphones (the “**Phone Standalone BT/Wi-Fi Chip Market**”);  
 11 (ii) standalone dual frequency Global Navigation Satellite System/Global Positioning System  
 12 (“GNSS/GPS”) chips for high-end smartphones (the “**Phone Standalone GNSS/GPS Chip**  
 13 **Market**”); and (iii) integrated One-Module Mid-High (“OMH”) amplifier/duplexer (“LPAMiD”)  
 14 modules for high-end smartphones (the “**OMH LPAMiD Module Market**”).

#### 15 1. The Geographic Market

16 26. The relevant geographic market for analyzing the antitrust violations committed by  
 17 Broadcom is global. The Critical Components are manufactured in various countries around the  
 18 world and shipped to customers worldwide. Prices for Critical Components do not vary  
 19 geographically except for shipping costs and customs duties, which are insignificant in comparison  
 20 to the value of Critical Components. Because the competitors and customers in the relevant product  
 21 markets operate globally, a supplier of Critical Components cannot charge different prices in  
 22 different countries. A customer of Critical Components would respond to a small but significant  
 23 increase in the price of Critical Components (a “SSNIP”) in one country by purchasing components  
 24 in a different country and shipping those components itself to the country where those components  
 25 would be used in its manufacturing operations. As such, even a monopoly seller of Critical  
 26 Components could not profitably impose a SSNIP in one country, or in a region smaller than the  
 27 entire world.



## 2. The Product Markets

### a. Phone Standalone Bluetooth (“BT”)/Wi-Fi Chip Market

27. Smartphones require BT and Wi-Fi components in order to function properly. These BT and Wi-Fi components interface with the device’s Application Processor (“AP”) in order to access the Internet over Wi-Fi networks and to communicate with other devices via a Bluetooth connection. Without BT and Wi-Fi components, smart devices cannot connect to the Internet over Wi-Fi (the best way to stream music and video and the only way to access the Internet on airplanes and in other locations lacking reliable high-speed cellular data coverage), nor can they communicate with other connected devices such as wireless headsets, speakers, or handsfree-equipped cars.

28. All smartphones support BT/Wi-Fi functionality, but different smartphones have different mechanisms to do so. Lower-end mass-market smartphones frequently use APs that have integrated BT/Wi-Fi functionality (“Integrated BT/Wi-Fi Solutions”). In contrast, the APs used in Flagship smartphones, including Samsung’s Exynos AP, do not include BT/Wi-Fi functionality. As such, Samsung’s high-end Flagship smartphones, like all other high-end smartphones including Apple’s iPhone, are built around Phone Standalone BT/Wi-Fi Chips. These standalone BT/Wi-Fi chips are not part of the AP, but rather interface with the AP in order to provide BT-Wi-Fi functionality.

29. Phone Standalone BT/Wi-Fi Chips used in phones such as Broadcom’s BCM4375 and BCM4389 chips are not reasonably interchangeable with Integrated BT/Wi-Fi Solutions used in lower-end smartphones. Integrated BT/Wi-Fi Solutions are typically not as technically advanced as BT/Wi-Fi Chips and the newest and most advanced features are typically available on standalone BT/Wi-Fi chips before they are available on Integrated BT/Wi-Fi Solutions. For example, during the Galaxy S10 smartphone development cycle Wi-Fi 6 was the most advanced Wi-Fi technology available, and it was offered only on a Broadcom standalone BT/Wi-Fi Chip, not on any Integrated BT/Wi-Fi Solutions. Thus, manufacturers cannot ensure that their Flagship devices have state-of-the-art technology and performance if they must rely on Integrated BT/Wi-Fi Solutions, which frequently rely on inferior legacy technology. The technology disadvantage associated with using Integrated BT/Wi-Fi Solutions is exacerbated by the long lead time involved in developing the AP

1 itself. Several other components of the AP (such as the central processing unit (“CPU”) and graphics  
2 processing unit (“GPU”)) have a multi-year development cycle, so using Integrated BT/Wi-Fi  
3 Solutions, which must be built-in to the AP, would require utilizing Integrated BT/Wi-Fi Solutions  
4 that are several years old by the time the AP is ready to deploy.

5 30. Because of these important technological and performance differences, customers like  
6 Samsung would not purchase Integrated BT/Wi-Fi Solutions instead of Phone Standalone BT/Wi-  
7 Fi Chips in response to a small but significant non-transitory increase in the price of Phone  
8 Standalone BT/Wi-Fi Chips. Indeed, Samsung uses Broadcom’s Phone Standalone BT/Wi-Fi Chips  
9 even though Broadcom’s Phone Standalone BT/Wi-Fi Chips are approximately twice as expensive  
10 as using Integrated BT/Wi-Fi Solutions.

11 31. Similarly, standalone chips that have only Wi-Fi or BT functionality, but not both, are  
12 not reasonably interchangeable with Phone Standalone BT/Wi-Fi Chips. Combining the Wi-Fi and  
13 BT functionality on a single chip instead of using separate BT and Wi-Fi chips allows vendors to  
14 reduce the size and cost of the components offering Wi-Fi and BT functionality. Because of the  
15 size and cost savings enabled by combining Wi-Fi and BT functionality in a single chip, customers  
16 like Samsung would not purchase separate Wi-Fi and BT chips in response to a small but significant  
17 non-transitory increase in the price of Phone Standalone BT/Wi-Fi Chips that combine both  
18 functions on a single chip.

19 32. Standalone BT/Wi-Fi chips designed for devices other than smartphones (such as  
20 BT/Wi-Fi chips used in personal computers, routers, or wearable devices) are not reasonably  
21 interchangeable with Phone Standalone BT/Wi-Fi Chips because they have different design and  
22 performance characteristics (such as different sizes, power draw, etc.). Because of these important  
23 technological and performance differences, customers like Samsung would not purchase Standalone  
24 BT/Wi-Fi Solutions designed for applications other than phones instead of Phone Standalone  
25 BT/Wi-Fi Chips in response to a small but significant non-transitory increase in the price of Phone  
26 Standalone BT/Wi-Fi Chips.

**b. Phone Standalone GNSS/GPS Chip Market**

33. Smartphones use GNSS/GPS Chips to provide autonomous geo-spatial positioning with global coverage for smart device applications and processes that use location services such as navigation, e-commerce, social media, and ridesharing.

34. As described above, certain Samsung's smartphones use an Exynos AP combined with a standalone BT/Wi-Fi chip in order to offer users superior performance and functionality. Because the version of Samsung's Exynos AP used with the Galaxy S10 did not offer integrated GNSS/GPS functionality (just as it did not include integrated BT/Wi-Fi functionality), Samsung and other smartphone makers that rely on an APs without GNSS/GPS functionality must purchase standalone GNSS/GPS chips like Broadcom's BCM47522.

35. Standalone GNSS/GPS chips for phones are not reasonably interchangeable with integrated APs that include GNSS/GPS functionality. A smartphone maker such as Samsung purchasing standalone GNSS/GPS chips would not switch to an integrated AP that includes GNSS/GPS functionality in response to a small but significant nontransitory increase in the prices of standalone GNSS/GPS chips because it would take multiple years and significant expense to reconfigure its phone design to incorporate an integrated AP and to obtain the new regulatory approvals necessary to sell a smartphone with an integrated AP.

36. GNSS/GPS systems operate on multiple frequency bands, and chips that support multiple frequency bands provide better accuracy in positioning than single-band chips. This improved accuracy is critical for Flagship Devices. GNSS/GPS chips that support only one frequency band (such as Sony's GNSS/GPS chip, which supports only the L1 band) are technologically inferior to and not reasonably interchangeable with GNS/GPSS chips like Broadcom's BCM45722, which supports two frequency bands (L1 and L5). Customers like Samsung would not switch to a single-band phone GNSS/GPS chips in response to a small but significant non-transitory increase in the price of dual band chips because of the reduced performance of those chips and the accompanying reduced sales and profits that they would experience as a result of the switch. As such, the relevant Phone Standalone GNSS/GPS Chip market is limited to dual-band GNSS/GPS chips.

1           37. GNSS/GPS chips for devices other than smartphones (such as chips used in wearables  
2 and chips for automotive or other uses) have different size, power, and performance characteristics  
3 from phone GNSS/GPS chips and as such are not reasonably interchangeable with phone  
4 GNSS/GPS chips. Customers like Samsung would not switch to a GNSS/GPS chip designed for  
5 devices other than smartphones in response to a small but significant nontransitory increase in the  
6 price of phone GNSS/GPS chips.

7                           **c.       OMH LPAMiD Module Market**

8           38. An OMH is part of the radio frequency front end (“RFFE”) control interface structure  
9 of a smartphone. The OMH amplifies and manipulates signals received from the device’s antenna  
10 and transmits them to the transceiver and modem.

11           39. The RFFE consists of four elements: (1) a transceiver that transmits signals to and  
12 from the modem; (2) a power amplifier module (“PAM”) that amplifies the radio frequency (“RF”) signal  
13 to radiate to the antenna; (3) a low noise amplifier (“LNA”) that amplifies the received signal  
14 by improving the sensitivity; and (4) a duplexer that separates the transmitter and the receiver using  
15 a filter. With the advent of 5G technology, device manufacturers have turned to “one-module”  
16 products that combine the functions of three of the four parts of the RFFE: PAM, LNA, and  
17 duplexer. One-module Mid/High LPAMiD components (also called “OMHs”) have a technical  
18 advantage over discrete components in terms of both size/compactness and device performance.

19           40. OMH LPAMiD modules are not reasonably interchangeable with discrete chips that  
20 provide PAM, LNA, and duplexer functionality. Customers such as Samsung purchasing OMH  
21 LPAMiD modules would not switch to discrete PAM, LNA, and duplexer chips in response to a  
22 small but significant nontransitory increase in the price of OMH LPAMiD modules.

23           41. Nor are OMH LPAMiD modules reasonably interchangeable with LPAMiD modules  
24 that offer low-band functionality because such modules do not offer the mid/high band functionality  
25 required for operating a smartphone. Customers such as Samsung purchasing OMH LPAMiD  
26 modules would not switch to low-band LPAMiD modules in response to a small but significant  
27 nontransitory increase in the price of OMH LPAMiD modules  
28

1                   **3.       Broadcom's Market Power in the Relevant Markets**

2           42.   As described in detail below, Broadcom has market power and monopoly power or a  
3 dangerous probability of obtaining monopoly power in the relevant markets. During the relevant  
4 period Broadcom was for a time the *only* competitor in some of the relevant markets, and at all times  
5 it has had a high share of each relevant market exceeding 70%. Each relevant market is  
6 characterized by high barriers to entry and expansion, enabling Broadcom to exercise market and  
7 monopoly power in each relevant market.

8                   **a.       Broadcom's Monopoly Power in the Global Phone Standalone**  
9                   **BT/Wi-Fi Chip Market**

10          43.   Until recently, Broadcom has been the sole merchant global supplier of phone  
11 standalone BT/Wi-Fi chips, affording it a 100% share of sales in the relevant Global Phone  
12 Standalone BT/Wi-Fi Chip Market. Until recently, Samsung used only Broadcom standalone  
13 BT/Wi-Fi chips, and upon information and belief, Apple's iPhone smartphones also exclusively use  
14 Broadcom's BT/Wi-Fi chips.

15          44.   Although Huawei manufactures its own BT/Wi-Fi Chip, Huawei uses its BT/Wi-Fi  
16 Chips only for its own Flagship HTC devices, and does not sell its BT/Wi-Fi Chip to third parties.  
17 As such, Huawei is not a competitor in the relevant market and Huawei's BT/Wi-Fi chips do not  
18 constrain Broadcom's pricing of its phone standalone BT/Wi-Fi chips.

19          45.   Qualcomm has recently launched a phone standalone BT/Wi-Fi chip in competition  
20 with Broadcom and Samsung has recently begun sourcing BT/Wi-Fi chips from Qualcomm.  
21 Nevertheless, Broadcom's share of the Global Phone Standalone BT/Wi-Fi Chip Market exceeded  
22 85% at the time of Broadcom's anticompetitive conduct described herein, affording Broadcom  
23 market and monopoly power, or alternatively a dangerous probability of obtaining monopoly power,  
24 in the Global Phone Standalone BT/Wi-Fi Chip Market. Indeed, Broadcom's share remains above  
25 75%, and Broadcom continues to possess market and monopoly power, or alternatively a dangerous  
26 probability of obtaining monopoly power, in the Global Phone Standalone BT/Wi-Fi Chip Market.

27          46.   Barriers to entry and expansion in Global Phone Standalone BT/Wi-Fi Chip Market  
28 are enormous. Development of such chips takes years and costs millions of dollars and requires

difficult to obtain technological expertise. Entry into the market is also made more difficult by the patent rights held by Broadcom and others.

**b. Broadcom's Monopoly Power in the Global Phone Standalone GNSS/GPS Chip Market**

47. Until recently, Broadcom has been the sole competitor in the Global Phone Standalone GNSS/GPS Chip Market, affording it a 100% share of sales in the Global Phone Standalone GNSS/GPS Chip Market.

48. Until recently, Samsung purchased all of its GNSS/GPS chips from Broadcom. Upon information and belief, Apple also purchases standalone GPS chips exclusively from Broadcom (though Apple couples these standalone chips with GNSS functionality available in Qualcomm APs used by Apple).

49. Although Huawei manufactures its own GNSS/GPS chip, Huawei uses its GNSS/GPS chips only for its own Flagship HTC devices, and does not sell its GNSS/GPS chips to third parties. As such, Huawei is not a competitor in the relevant market and Huawei's GNSS/GPS chips do not constrain Broadcom's pricing of its phone standalone GNSS/GPS chips.

50. As described above, Sony's GNSS/GPSS chips operate on only a single band and do not compete in the relevant market.

51. Broadcom's share of the Global Phone Standalone GNSS/GPS Chip Market was above 75%, and likely above 90% at the time of Broadcom's anticompetitive conduct described herein, affording Broadcom market and monopoly power, or alternatively a dangerous probability of obtaining monopoly power, in the in the Global Phone Standalone GNSS/GPS Chip Market. Indeed, Broadcom continues to possess market and monopoly power, or alternatively a dangerous probability of obtaining monopoly power, in the Global Phone Standalone GNSS/GPS Chip Market.

52. Barriers to entry and expansion in the Global Phone Standalone GNSS/GPS Chip Market are enormous. Development of such chips takes years and costs millions of dollars and requires difficult to obtain technological expertise. Entry into the market is also made more difficult by the patent rights held by Broadcom and others.

**c. Broadcom's Monopoly Power in the Global OMH LPAMiD Module Market**

53. Broadcom is one of only three suppliers in the Global OMH LPAMiD Module Market. Historically, Qorvo, an American semiconductor manufacturer headquartered in Greensboro, NC, has been the only other merchant supplier of high-quality OMH LPAMiD modules. Qualcomm also offers OMH LPAMiD chips, but until recently, its chips were technologically inferior to Broadcom's and Qorvo's chips. As a result, to date Qualcomm has seen limited commercial success in the Global OMH LPAMiD Module Market.

54. During the relevant time period, Samsung purchased OMH LPAMiD modules from both Broadcom and Qorvo. Samsung used OMH LPAMiD chips from both Broadcom and Qorvo in its Flagship Devices in the United States. Upon information and belief, Apple has also purchased OMH LPAMiD chips from both Broadcom and Qorvo during the relevant time period.

55. In 2020 Samsung was forced by the conduct challenged in this Complaint to purchase all of its OMH LPAMiD modules from Broadcom. Upon information and belief, Apple has also purchased all of its OMH LPAMiD modules from Broadcom since entering into an agreement with Broadcom in 2019.

56. At the time of Broadcom's anticompetitive conduct described herein, Broadcom's share of the Global OMH LPAMiD Module Market exceeded 70%, and Broadcom's high share continues to this day. Accordingly, Broadcom had market power and monopoly power, or in the alternative a dangerous probability of obtaining monopoly power, in the Global OMH LPAMiD Module Market.

57. Barriers to entry and expansion in the Global OMH LPAMiD Module Market are enormous. Development of such chips takes years and costs millions of dollars and requires difficult to obtain technological expertise. Entry into the market is also made more difficult by the patent rights held by Broadcom and others.



**B. Broadcom's Anticompetitive Conduct**

**1. Retaliation Against Samsung for Dual Sourcing**

58. Since at least 2003, Samsung has purchased a significant volume of components, including the Critical Components, from Broadcom for use in its connected devices. Each week, Samsung's U.S. purchasing center, Samsung Electronics America, Inc., typically places an order with Broadcom for the Critical Components and Broadcom responds acknowledging receipt of the order.

59. Beginning in 2019, nascent competition to Broadcom enabled Samsung to begin to implement its long-standing preference for multi-sourcing, a strategy intended to create a more stable and diversified supplier base and reduce its costs for certain types of components. Samsung's consistent belief had been that its multi-sourcing strategy would lead its suppliers to innovate and improve product quality as they competed to win more of Samsung's business.

60. By August 2019, Broadcom became aware that Samsung was starting to multi-source OMH components from Qorvo and, in retaliation, engaged in a course of exclusionary conduct.

61. In August of 2019, Broadcom CEO Hock Tan expressed his displeasure to then-Samsung CEO DJ Koh about Samsung's decision to source OMH components from Qorvo, writing that he was "so disappointed to have confirmed today that the RFFE socket in the GS11 for North American markets has been awarded to my hated competitor Qorvo." Following Hock Tan's lead, other Broadcom executives and employees repeatedly raised concerns about Samsung's decision not to give Broadcom 100% of its OMH business in multiple phone calls and emails.

62. On February 12, 2020, the Regional GM of Broadcom Korea threatened to "reconsider" collaboration with Samsung on new projects, including IP and R&D collaborations. Broadcom cited as its main reason Samsung's decision to dual-source OMH components for the Galaxy S10 smartphone. Broadcom made clear that it was issuing a simple ultimatum: Samsung must use components sourced from Broadcom, and not Broadcom's competitors.

63. On information and belief, Broadcom CEO Hock Tan personally directed in early February 2020 that all shipments of components for use in Samsung's mobile devices be halted. On February 14, 2020, in accordance with Hock Tan's instructions, Broadcom abruptly and without



1 notice stopped responding to Samsung's POs for such components, and Broadcom refused to  
2 acknowledge any Samsung POs for these devices between February 14, 2020 and March 26, 2020.  
3 These unacknowledged POs totaled approximately \$83 million in purchases. Although Samsung  
4 had some inventory on hand to satisfy current manufacturing needs, Broadcom's failure to respond  
5 to POs created immediate risk of near-term supply disruptions.

6 64. Broadcom understood that its decision to stop shipping components to Samsung put  
7 enormous pressure on Samsung to accept Broadcom's demand for exclusivity. As disclosed by the  
8 KFTC, on February 27, the head of Broadcom Korea informed Broadcom CEO Hock Tan and  
9 Broadcom COO Charlie Kawwas that Samsung "recognize[d] that due to lack of a supply  
10 agreement, they have no leverage and Broadcom can turn off PO acknowledgement again anytime  
11 if the long term discussions are not converging."

12 65. On February 27, 2020, Broadcom demanded 100 percent exclusivity for the  
13 BCM4389 BT/Wi-Fi chips to be used in Samsung's Galaxy Note 20 flagship devices, as well as a  
14 three-year exclusive agreement on all standalone BT/Wi-Fi components as a condition of restarting  
15 shipments. Because Samsung was concerned about the impending supply disruptions if Broadcom  
16 continued to ignore Samsung's POs, Samsung offered to purchase 100 percent of its OMH and  
17 BT/Wi-Fi chips for the Galaxy Note 20 flagship devices from Broadcom.

18 66. On February 28, 2020, Broadcom rejected that offer, and reiterated that it would not  
19 resume responding to POs until Samsung signed a three-year exclusive agreement (covering 2021-  
20 2023) committing to de facto total exclusivity with regard to all the Critical Components, not just  
21 OMH and BT/Wi-Fi chips. To implement its exclusivity demand, Broadcom insisted that Samsung  
22 (1) maintain its current level of purchases with Broadcom's Wireless Communications and  
23 Connectivity business, which manufactures its BT/Wi-Fi and GNSS/GPS chips (in practice, a 100  
24 percent exclusive for all of Samsung's anticipated 2021-2023 requirements); and (2) commit to a  
25 new 100 percent exclusive relationship with Broadcom's Wireless Semiconductor Division, which  
26 manufactures its OMH components. Broadcom did not offer any legitimate procompetitive or  
27 competitively neutral business rationale to justify its demand for exclusivity.

67. On March 4, 2020, Samsung offered, in principle, to commit to Broadcom for a major portion of its BT/Wi-Fi and GNSS/GPS chip requirements, but not its OMH requirements. Broadcom instead demanded a three-year agreement committing Samsung to purchase *all* Critical Components at or above the 2019 level, which had been 100 percent of BT/Wi-Fi chips and GNSS/GPS chips and roughly 70 percent of OMH components. Samsung refused this offer for a variety of reasons including, but not limited to, the fact that such an agreement would cause an enormous financial loss and eliminate Samsung's multi-sourcing efforts for OMH and other Critical Components going forward. Samsung again requested that Broadcom respond to its POs, but Broadcom repeated that it would not respond to Samsung's POs until the parties agreed on a long-term exclusive agreement.

68. As the KFTC, which conducted a review of documents obtained from Broadcom, found, on March 4, 2020 Broadcom CEO Hock Tan instructed Broadcom employees to stop their negotiations with Samsung in response to Samsung's refusal to commit to sourcing OMH components exclusively from Broadcom.

69. During a March 5, 2020 meeting, Broadcom ramped up its coercive efforts, informing Samsung that it would stop doing business with Samsung altogether unless Samsung satisfied Broadcom's demands for exclusivity. Immediately after the meeting, Broadcom stopped shipping all components to Samsung and its manufacturing subcontractors and entirely stopped all technical support as well. No components for Samsung phones were shipped between March 5 and March 27, 2020 even though Broadcom had previously acknowledged those orders. In its internal documents, as found by the KFTC, Broadcom referred to this action of cutting off all components as their "nuclear option," a "bomb drop" that Broadcom acknowledged was "beyond business ethics." On March 6, Broadcom reiterated that it would only resume responding to Samsung's POs and fulfilling Samsung's orders for Critical Components after Samsung executed a long-term exclusive agreement.

70. Over the next several weeks, managers and executives at the companies engaged in a series of discussions. On March 9 and March 13, under duress from Broadcom's termination of shipments, Samsung made Broadcom offers committing to exclusivity for certain Critical

1 Components for Flagship Devices but leaving Samsung some freedom to source other Critical  
2 Components from alternate suppliers. Broadcom rejected both proposals. Further, between March  
3 9 and March 13, Broadcom assured Samsung multiple times that it would resume fulfilling  
4 Samsung's orders for Critical Components and respond to POs. But on March 18, Broadcom  
5 walked away from its commitment, again informing Samsung that it would not resume shipments  
6 until an exclusive agreement was executed. Broadcom's supply cutoff significantly delayed  
7 Samsung's production plan for its Flagship Devices.

8 71. In addition to cutting off shipments to Samsung and refusing to respond to Samsung's  
9 POs, Broadcom cut off technical support to Samsung until it agreed to execute an exclusive  
10 agreement. The Critical Components from Broadcom are custom designed for Samsung's devices  
11 and rely on Broadcom source code, so Samsung requires technical support from Broadcom to ensure  
12 that the components fully function in Samsung's Flagship Devices. Typically, Samsung and  
13 Broadcom would exchange e-mails and calls daily, and in certain cases, hold weekly meetings,  
14 discussing software improvement efforts and Samsung's development projects related to  
15 Broadcom's chips. But between March 5 and March 27, 2020, Broadcom refused to provide  
16 technical support to Samsung or communicate with Samsung's engineers about these projects. As  
17 a result of Broadcom's refusal to provide technical support, software issues such as WiFi  
18 connectivity problems remained unresolved, causing significant inconvenience for Samsung's  
19 customers.

20 72. With respect to GNSS development projects, Samsung was working to incorporate  
21 Broadcom's new BCM47765 component into the Galaxy Note 20. Broadcom failed to provide the  
22 engineering sample necessary to move forward with this project, so Samsung had to launch the  
23 Galaxy Note 20 with Broadcom's older, less advanced BCM47755 chip. Broadcom also failed to  
24 assist with the verification step for four other ongoing GNSS development projects, which delayed  
25 Samsung's internal development processes.

26 73. With respect to BT/Wi-Fi development projects, Samsung was conducting various  
27 development projects related to the use of Broadcom's BCM4375 and BCM4389 chips in its Galaxy  
28 S20 and Galaxy Note 20 devices. Despite regular outreach from Samsung, Broadcom refused to

1 communicate with Samsung's engineers about these projects until Samsung executed a long-term  
2 agreement with Broadcom.

3 74. Broadcom's refusal to provide technical support to Samsung delayed the development  
4 of its Flagship Devices and, in certain instances, resulted in lower-quality devices with less-  
5 advanced technology.

6 **2. Samsung Forced to Sign the "Strategic Agreement"**

7 75. Broadcom's refusal to fulfill Samsung POs left Samsung no choice but to capitulate  
8 to Broadcom's anticompetitive demands. Samsung was running out of Target Component inventory  
9 and close to the point where it would need to reduce device production – with only one week of  
10 inventory of the Broadcom OMH used in the Z Flip and Note 10 and only two weeks of inventory  
11 of the Broadcom OMH used in its newly-launched S20. As a result, Samsung had no practical  
12 choice but to give in to Broadcom. Even where competitive alternatives to Broadcom components  
13 were available, it was (and remains) impossible to redesign a Samsung mobile device to include  
14 non-Broadcom components and obtain the required regulatory approvals to sell the redesigned  
15 device in less than six months. And any delay in shipping would have had devastating consequences  
16 for Samsung's business, causing it to breach contracts with partners across the globe and irreparably  
17 harming Samsung's brand image with consumers as well as business partners.

18 76. Faced with the potential destruction of its mobile device business, Samsung agreed to  
19 a modified version of Broadcom's original demand, an agreement memorialized in the Strategic  
20 Agreement between Samsung Mobile and Broadcom ("Strategic Agreement") executed by the  
21 parties on March 27, 2020 with an effective date of January 1, 2021.

22 77. The Strategic Agreement provided that for a three-year period (January 1, 2021 to  
23 December 31, 2023), Samsung (or its contract manufacturers or designated purchasers) would  
24 purchase an annual minimum volume per year of Critical Components (the "Annual Commitment")  
25 for use in branded products of Samsung's Mobile Communication Business, including smartphones  
26 and smartwatches, as well as tablets, earbuds, and other mutually agreed upon products.

78. Because the Annual Commitment exceeded Samsung's requirements of each of the Critical Components, the Annual Commitment operated as a de facto 100 percent exclusive agreement with Broadcom.

79. The Strategic Agreement also contained a "take or pay" provision: if Samsung's purchases did not meet the Annual Commitment by December 31 of each year, Samsung was required to pay the difference between its actual purchases and the Annual Commitment within forty-five days of receiving Broadcom's invoice.

80. The Strategic Agreement operated as a de facto tying arrangement: it required Samsung to purchase unwanted OMH LPAMiD Modules as a condition of obtaining BT/Wi-Fi and GNSS/GPS chips from Broadcom.

81. Broadcom immediately resumed shipping components and providing technical support once Samsung executed the Strategic Agreement, demonstrating that the only reason it had cut off supply and support to Samsung was to extract a commitment from Samsung to source exclusively from Broadcom.

### **3. Apple-Broadcom Exclusive Agreements**

82. Broadcom publicly announced in June 2019 that it had entered into a two-year agreement with Apple to supply RF components for Apple smartphones, tablets, and watches.<sup>1</sup> The announcement stated that Apple intends to source all of its requirements for the RF components from Broadcom. In January 2020, Broadcom announced that it had entered into two additional multi-year agreements with Apple for the supply of certain unspecified wireless components and modules.<sup>2</sup>

83. Samsung does not know whether Apple was coerced by Broadcom to execute the exclusive agreements using anticompetitive coercive conduct of the type used by Broadcom against Samsung (or otherwise). But whatever the mechanism by which Broadcom obtained all of Apple's business, other suppliers of RF components for high-end smartphones were also foreclosed from competing for Apple's business.

<sup>1</sup> Broadcom 8-K dated June 10, 2019.

<sup>2</sup> Broadcom 8-K dated January 23, 2020.

**C. Anticompetitive Effects of Broadcom's Conduct**

84. Broadcom's illegal exclusionary conduct substantially lessened competition and tended to entrench and maintain the company's monopoly position in the relevant markets.

85. The Strategic Agreement between Broadcom and Samsung was intended to have, and did in fact have, the unlawful practical effect of preventing Samsung from purchasing the relevant products from other suppliers. Companies like Qorvo and Qualcomm that might have competed -- and in some instances were already competing effectively -- with Broadcom to design, develop, and offer the relevant products to manufacturers of Flagship Devices like Samsung and Apple were foreclosed from the market.

86. Because Samsung and Apple combined account for a substantial portion (more than 70%) of the market demand for the Critical Components, Broadcom's exclusionary scheme resulted in substantial foreclosure in each of the relevant markets.

87. Broadcom's anticompetitive conduct forced Samsung to pay higher prices for the relevant products than it otherwise would have because Samsung was prevented from implementing its procompetitive multi-sourcing strategy. Instead, Broadcom leveraged its monopoly position to forestall the multi-sourcing that would threaten its monopolies in the markets for the relevant products.

**D. Termination of the Strategic Agreement**

88. After signing the Strategic Agreement under duress, Samsung tried repeatedly to obtain relief from Broadcom from the Strategic Agreement's onerous provisions that prevented Samsung from working with Broadcom's competitors and forced Samsung to buy components from Broadcom that Samsung would have preferred to purchase from Broadcom's competitors. Broadcom repeatedly rejected Samsung's attempts to modify or terminate the Strategic Agreement.

89. Broadcom became aware in 2021 that antitrust enforcers in Europe and Korea were investigating the anticompetitive effects of Broadcom's conduct, specifically including the exclusive dealing requirements of the Strategic Agreement.

90. In an attempt to head off enforcement actions and fines by these enforcers, in late June of 2021, Broadcom informed Samsung that its CEO Hock Tan had agreed to terminate the Strategic Agreement, which was terminated by mutual agreement effective as of July 2, 2021.

91. Broadcom's action, terminating the Strategic Agreement only when it became clear that it would face scrutiny from antitrust enforcers around the globe, after refusing to do so in response to attempts by Samsung to end or modify the Strategic Agreement, demonstrates the unlawful nature of the Strategic Agreement and Broadcom's awareness that its sole purpose was to improperly restrain competition.

#### **E. No Justification for Broadcom's Anticompetitive Conduct**

92. There are no legitimate procompetitive or competitively neutral justifications for Broadcom's anticompetitive conduct. Broadcom's conduct served only to preserve Broadcom's sales and profits and to entrench its dominant market position by foreclosing competition. It did nothing to improve market efficiency, facilitate the development of better products, or enhance consumer choice or welfare.

93. Any claim by Broadcom of an explanation or justification for imposing exclusivity on Samsung is implausible given that Broadcom has been for many years selling a variety of chips -- including the Critical Components at issue -- to Samsung without any exclusivity requirement or minimum purchase commitment, and only imposed the exclusivity requirements when it became aware of Samsung's effort to multisource the Critical Components.

#### **F. Antitrust Injury and Damages**

94. Broadcom's conduct has substantially reduced (or eliminated) competition in the markets for the relevant products, and Samsung was and continues to be injured by this reduction in competition, because it has suffered from higher prices and decreased choice of components.

95. Broadcom's illegal exclusionary conduct substantially foreclosed Qorvo from the Global OMH LPAMiD Module Market: it effectively locked Qorvo out from supplying both Broadcom and Apple, which together account for at least 70 percent of the overall demand for OMH LPAMiD Modules.



1           96.   Broadcom's illegal exclusionary conduct has also substantially foreclosed Qualcomm  
2 from the Global Phone Standalone BT/Wi-Fi Chip Market: it effectively locked Qualcomm out from  
3 supplying both Broadcom and Apple, which together account for at least 70 percent of the overall  
4 demand for BT/Wi-Fi chips.

5           97.   As a result of Broadcom's anticompetitive conduct, Samsung was denied a choice of  
6 suppliers for the Critical Components, paid higher prices, and has suffered antitrust injury because  
7 of the lessening of competition caused by Broadcom's conduct. Samsung has thus suffered exactly  
8 the types of injuries that the Sherman and Clayton Acts were intended to prevent, and those injuries  
9 flowed directly and proximately from Broadcom's illegal exclusionary conduct.

10          98.   Samsung has suffered significant damages as a result of Broadcom's anticompetitive  
11 conduct, including overcharges on purchases it was required to make from Broadcom under the  
12 Strategic Agreement of Critical Components it would have purchased from Broadcom's competitors  
13 at lower prices, as well as purchases of excessive inventory of Critical Components that it was  
14 required to make as a result of Broadcom's anticompetitive imposition of the Strategic Agreement.

15          99.   Samsung at all times made reasonable efforts to mitigate its damages.

## 16                                   **CLAIMS FOR RELIEF**

### 17                                   **COUNT 1**

#### 18                   **EXCLUSIVE DEALING IN VIOLATION OF § 3 CLAYTON ACT,** 19                   **15 U.S.C. § 14, AND § 1 SHERMAN ACT, 15 U.S.C. § 1** 20                   **(GLOBAL PHONE STANDALONE BT/WI-FI CHIP MARKET)**

21          100. Samsung incorporates all other allegations in this Complaint into Count 1.

22          101. Broadcom imposed unlawful exclusive dealing arrangements with Samsung and other  
23 smart device manufacturers that amounted to *de facto* 100 percent exclusive dealing for standalone  
24 BT/Wi-Fi chips used in phones, in which Broadcom has market power and monopoly power or a  
25 dangerous probability of obtaining monopoly power. These agreements had the effect of forcing  
26 Samsung to purchase 100 percent of its requirements for standalone BT/Wi-Fi chips used in phones  
27 from Broadcom for more than one year, to the exclusion of Broadcom's competitors. By virtue of  
28 Broadcom's agreements with Samsung and Apple, Broadcom's competitors were foreclosed from  
more than 70% of the available market for standalone BT/Wi-Fi chips.



102. One effect of the arrangements described herein is to unreasonably restrain trade in the Global Phone Standalone BT/Wi-Fi Chip Market and to tend to create and maintain a monopoly in the relevant market.

103. The effect of Broadcom's anticompetitive exclusionary conduct has been to raise prices for customers such as Samsung; to prevent the sale of lower-cost, equally or higher-quality competing products in the Global Phone Standalone BT/Wi-Fi Chip Market; to deter, delay, or hinder entry that would be procompetitive; to substantially lessen competition; to diminish innovation and incentives to innovate; and to substantially foreclose competitors from access to the Global Phone Standalone BT/Wi-Fi Chip Market.

104. As a direct purchaser of BT/Wi-Fi Chips, Samsung has suffered damages as a direct and proximate result of Broadcom's illegal exclusive dealing arrangement, including by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for BT/Wi-Fi chips for its phones.

## **COUNT 2**

### **EXCLUSIVE DEALING IN VIOLATION OF § 3 CLAYTON ACT, 15 U.S.C. § 14, AND § 1 SHERMAN ACT, 15 U.S.C. § 1 (GLOBAL OMH LPAMID MODULE MARKET)**

105. Samsung incorporates all other allegations in this Complaint into Count 2.

106. Broadcom imposed unlawful exclusive dealing arrangements with Samsung and other smart device manufacturers that amounted to de facto 100 percent exclusive dealing for OMH LPAMiD Modules, in which Broadcom has market power and monopoly power or a dangerous probability of obtaining monopoly power. These agreements had the effect of forcing Samsung to purchase 100 percent of its requirements for OMH LPAMiD Modules for more than one year, to the exclusion of Broadcom's competitors. By virtue of Broadcom's agreements with Samsung and Apple, Broadcom's competitors were foreclosed from more than 70% of the available market for OMH LPAMiD Modules.

107. One effect of the arrangements described herein is to unreasonably restrain trade in the Global OMH LPAMiD Module Market and to tend to create and maintain a monopoly in the relevant market.

108. The effect of Broadcom's anticompetitive exclusionary conduct has been to raise prices for customers such as Samsung; to prevent the sale of lower-cost, equally or higher-quality competing products in the Global Phone Standalone BT/Wi-Fi Chip Market; to deter, delay, or hinder entry that would be procompetitive; to substantially lessen competition; to diminish innovation and incentives to innovate; and to substantially foreclose competitors from access to the Global OMH LPAMiD Module Market.

109. As a direct purchaser of OMH LPAMiD Modules, Samsung has suffered damages as a direct and proximate result of Broadcom's illegal exclusive dealing arrangement, including by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for OMH LPAMiD Modules for its phones.

### **COUNT 3**

#### **TYING OF BT/WI-FI CHIPS AND LPAMID MODULES IN VIOLATION OF § 3 CLAYTON ACT, 15 U.S.C. § 14, AND § 1 SHERMAN ACT, 15 U.S.C. § 1**

110. Samsung incorporates all other allegations in this Complaint into Count 3.

111. Broadcom imposed an unlawful tying agreement upon Samsung. While the Strategic Agreement did not expressly condition Broadcom's sale of phone standalone BT/Wi-Fi Chips on Samsung's agreement to purchase OMH LPAMiD Modules from Broadcom, the terms of the Strategic Agreement (including the Annual Commitment) rendered it commercially unviable for Samsung to purchase Qorvo's or another manufacturer's OMH LPAMiD Modules if it wished to procure phone BT/Wi-Fi chips from Broadcom.

112. Broadcom's tying arrangement affected a substantial volume of interstate commerce.

113. Broadcom's tying arrangement involved two separate products: phone standalone BT/Wi-Fi Chips (the tying product) and OMH LPAMiD Modules (the tied product).

114. Broadcom has market power in the tying product as a result of its share of more than 70% in the Global Phone Standalone BT/Wi-Fi Chip Market.

115. Broadcom forced Samsung to purchase the tied product if it wished to purchase the tying product (or to pay up to the Annual Commitment amount, which in practice forces Samsung to purchase its requirements of the tied product from Broadcom).

116. This tying arrangement created a not insubstantial anticompetitive effect in the market for the tied product.

117. Broadcom's tying arrangement unreasonably restrained trade and harmed competition in the OMH LPAMiD Modules Market in a variety of ways, including: (a) decreasing competitors' abilities to enter into or effectively compete in the market for OMH LPAMiD Modules; (b) enabling Broadcom to extract higher prices for its OMH LPAMiD Modules (which, in turn, raises the price of smartphones); (c) maintaining Broadcom's market power in the OMH LPAMiD Module Market; and (d) facilitating Broadcom's acquisition of even greater market power in the OMH LPAMiD Module Market.

118. The anticompetitive effects of Broadcom's conduct outweigh any procompetitive benefits; indeed, Broadcom did not, and cannot, allege that its tying arrangement had any procompetitive benefits.

119. In any event, the anticompetitive effects of Broadcom's conduct outweigh any potential procompetitive benefits.

120. As a direct purchaser of OMH LPAMiD Modules, Samsung has suffered damages as a direct and proximate result of Broadcom's illegal tying practices, including by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for OMH LPAMiD Modules for its phones.

#### **COUNT 4**

#### **TYING OF GNSS/GPS CHIPS AND OMH LPAMID MODULES IN VIOLATION OF § 3 CLAYTON ACT, 15 U.S.C. § 14, AND § 1 SHERMAN ACT, 15 U.S.C. § 1**

121. Samsung incorporates all other allegations in this Complaint into Count 4.

122. Broadcom imposed an unlawful tying agreement upon Samsung. While the Strategic Agreement does not expressly condition Broadcom's sale of phone GNSS/GPS chips on Samsung's agreement to purchase OMH LPAMiD chips from Broadcom, the terms of the Strategic Agreement (including the Annual Commitment) rendered it commercially unviable for Samsung to purchase Qorvo's or another manufacturer's OMH LPAMiD Modules if it wished to procure phone GNSS/GPS chips from Broadcom.

123. Broadcom's tying arrangement affected a substantial volume of interstate commerce.

124. Broadcom's tying arrangement involved two separate products: phone standalone GNSS/GPS Chips (the tying product) and OMH LPAMiD Modules (the tied product).

125. Broadcom has market power in the tying product as a result of its share of more than 70% in the Global Phone Standalone GNSS/GPS Chip Market.

126. Broadcom forced Samsung to purchase the tied product if it wished to purchase the tying product (or to pay up to the Annual Commitment amount, which in practice forces Samsung to purchase its requirements of the tied product from Broadcom).

127. This tying arrangement created a not insubstantial anticompetitive effect in the market for the tied product.

128. Broadcom's tying arrangement unreasonably restrained trade and harmed competition in the OMH LPAMiD Modules Market in a variety of ways, including: (a) decreasing competitors' abilities to enter into or effectively compete in the market for OMH LPAMiD Modules; (b) enabling Broadcom to extract higher prices for its OMH LPAMiD Modules (which, in turn, raised the price of smartphones); (c) maintaining Broadcom's market power in the OMH LPAMiD Module Market; and (d) facilitating Broadcom's acquisition of even greater market power in the OMH LPAMiD Module Market.

129. The anticompetitive effects of Broadcom's conduct outweigh any procompetitive benefits; indeed, Broadcom did not, and cannot, allege that its tying arrangement had any procompetitive benefits.

130. In any event, the anticompetitive effects of Broadcom's conduct outweighed any potential procompetitive benefits.

131. As a direct purchaser of OMH LPAMiD Modules, Samsung has suffered damages as a direct and proximate result of Broadcom's illegal tying practices, including by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for OMH LPAMiD Modules for its phones.

**COUNT 5**

**MONOPOLIZATION, OR IN THE ALTERNATIVE ATTEMPTED  
MONOPOLIZATION, IN VIOLATION OF § 2 SHERMAN ACT, 15 U.S.C. § 2  
(GLOBAL PHONE STANDALONE BT/WI-FI CHIP MARKET)**

132. Samsung incorporates all other allegations in this Complaint into Count 5.

133. Broadcom has made more than 70 percent of all sales of Standalone BT/Wi-Fi Chips for phones since 2019.

134. At all relevant times, Broadcom has had monopoly power the Global Phone Standalone BT/Wi-Fi Chip Market. Alternatively, Broadcom has had a dangerous probability of obtaining monopoly power the Global Phone Standalone BT/Wi-Fi Chip Market.

135. Broadcom willfully has maintained its monopoly, or in the alternative has acted with specific intent to attempt to obtain a monopoly, by means of its unlawful and anticompetitive *de facto* exclusive dealing and tying arrangements with smart device manufacturers. Individually and collectively, Broadcom's agreements, contracts, and understandings substantially foreclose competition in the Global Phone Standalone BT/Wi-Fi Chip Market.

136. The effect of Broadcom's anticompetitive maintenance of its monopoly, or in the alternative of its anticompetitive attempt to obtain monopoly power, has been to raise prices for Samsung and other customers; to prevent the sale of lower-cost, equally or higher-quality competing products in the relevant market; to substantially foreclose competitors from access to the relevant markets to deter, delay, or hinder entry that would be procompetitive; to substantially lessen competition; to diminish innovation and incentives to innovate; and to create and maintain its monopoly position, or in the alternative to attempt to obtain a monopoly, in each of the relevant market.

137. As a direct purchaser of standalone BT/Wi-Fi chips, Samsung has been damaged by Broadcom's anticompetitive maintenance of its monopoly, or in the alternative by its anticompetitive attempt to obtain monopoly power, by being unable to source standalone BT/Wi-Fi chips for phones from lower-cost competing suppliers, losing profits it would have made, and by means of overcharges for standalone BT/Wi-Fi chips for phones.

**COUNT 6****EXCLUSIVE DEALING IN VIOLATION OF CARTWRIGHT ACT,  
CAL. BUS. & PROF. CODE §§ 16720, 16727  
(GLOBAL PHONE STANDALONE BT/WI-FI CHIP MARKET)**

138. Samsung incorporates all other allegations in this Complaint into Count 6.

139. Broadcom imposed unlawful exclusive dealing arrangements with Samsung and other smart device manufacturers that amounted to *de facto* 100 percent exclusive dealing for standalone BT/Wi-Fi chips used in phones, in which Broadcom has a monopoly position. These agreements had the effect of forcing Samsung to purchase 100 percent of its requirements for standalone BT/Wi-Fi chips used in phones from Broadcom for more than one year, to the exclusion of Broadcom's competitors. By virtue of Broadcom's agreements with Samsung and Apple, Broadcom's competitors were foreclosed from more than 70% of the available market for standalone BT/Wi-Fi chips.

140. One effect of the arrangements described herein has been to unreasonably restrain trade and to substantially lessen competition in the Global Phone Standalone BT/Wi-Fi Chip Market, and to tend to create and maintain a monopoly in the relevant market.

141. The effect of Broadcom's anticompetitive exclusionary conduct has been to raise prices for customers such as Samsung; to prevent the sale of lower-cost, equally or higher-quality competing products in the Global Phone Standalone BT/Wi-Fi Chip Market; to deter, delay, or hinder entry that would be procompetitive; to substantially lessen competition; to diminish innovation and incentives to innovate; and to substantially foreclose competitors from access to the Global Phone Standalone BT/Wi-Fi Chip Market.

142. As a direct purchaser of BT/Wi-Fi chips, Samsung has been damaged by Broadcom's unlawful exclusive dealing arrangement by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for BT/Wi-Fi chips for its phones.

**COUNT 7**

**EXCLUSIVE DEALING IN VIOLATION OF CARTWRIGHT ACT,  
CAL. BUS. & PROF. CODE §§ 16720, 16727  
(GLOBAL OMH LPAMID MODULE MARKET)**

143. Samsung incorporates all other allegations in this Complaint into Count 7.

144. Broadcom imposed unlawful exclusive dealing arrangements with Samsung and other smart device manufacturers that amounted to de facto 100 percent exclusive dealing for OMH LPAMiD Modules, in which Broadcom has a monopoly position. These agreements had the effect of forcing Samsung to purchase 100 percent of its requirements for OMH LPAMiD Modules for more than one year, to the exclusion of Broadcom's competitors. By virtue of Broadcom's agreements with Samsung and Apple, Broadcom's competitors were foreclosed from more than 70% of the available market for OMH LPAMiD modules.

145. One effect of the arrangements described herein has been to unreasonably restrain trade and to substantially lessen competition in the Global OMH LPAMiD Module Market, and to tend to create and maintain a monopoly in the relevant market.

146. The effect of Broadcom's anticompetitive exclusionary conduct has been to raise prices for customers such as Samsung; to prevent the sale of lower-cost, equally or higher-quality competing products in the Global Phone Standalone BT/Wi-Fi Chip Market; to deter, delay, or hinder entry that would be procompetitive; to substantially lessen competition; to diminish innovation and incentives to innovate; and to substantially foreclose competitors from access to the Global OMH LPAMiD Module Market.

147. As a direct purchaser of OMH LPAMiD Modules, Samsung has suffered damages as a direct and proximate result of Broadcom's illegal exclusive dealing arrangement, including by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for OMH LPAMiD Modules for its phones.

**COUNT 8**

**TYING OF BT/WI-FI CHIPS AND LPAMID MODULES  
IN VIOLATION OF CARTWRIGHT ACT,  
CAL. BUS. & PROF. CODE §§ 16720, 16727**

148. Samsung incorporates all other allegations in this Complaint into Count 8.



1           149. The Strategic Agreement imposed an unlawful tying agreement upon Samsung.  
2 While the Strategic Agreement does not expressly condition Broadcom's sale of phone standalone  
3 BT/Wi-Fi Chips on Samsung's agreement to purchase OMH LPAMiD Modules from Broadcom,  
4 the terms of the Strategic Agreement (including the Annual Commitment) rendered it commercially  
5 unviable for Samsung to purchase Qorvo's or another manufacturer's OMH LPAMiD Modules if it  
6 wished to procure phone BT/Wi-Fi chips from Broadcom.

7           150. Broadcom's tying arrangement affected a substantial volume of interstate commerce.

8           151. Broadcom's tying arrangement involved two separate products: phone standalone  
9 BT/Wi-Fi Chips (the tying product) and OMH LPAMiD Modules (the tied product).

10           152. Broadcom has market power in the tying product as a result of its share of more than  
11 70% in the Global Phone Standalone BT/Wi-Fi Chip Market.

12           153. Broadcom forced Samsung to purchase the tied product if it wished to purchase the  
13 tying product (or to pay up to the Annual Commitment amount, which in practice forced Samsung  
14 to purchase its requirements of the tied product from Broadcom).

15           154. This tying arrangement created a not insubstantial anticompetitive effect in the market  
16 for the tied product.

17           155. Broadcom's tying arrangement unreasonably restrained trade and harmed competition  
18 in the OMH LPAMiD Modules Market in a variety of ways, including: (a) decreasing competitors'  
19 abilities to enter into or effectively compete in the market for OMH LPAMiD Modules; (b) enabling  
20 Broadcom to extract higher prices for its OMH LPAMiD Modules (which, in turn, raises the price  
21 of smartphones); (c) maintaining Broadcom's market power in the OMH LPAMiD Module Market;  
22 and (d) facilitating Broadcom's acquisition of even greater market power in the OMH LPAMiD  
23 Module Market.

24           156. The anticompetitive effects of Broadcom's conduct outweigh any procompetitive  
25 benefits; indeed, Broadcom did not, and cannot, allege that its tying arrangement had any  
26 procompetitive benefits.

27           157. In any event, the anticompetitive effects of Broadcom's conduct outweigh any  
28 potential procompetitive benefits.



158. As a direct purchaser of OMH LPAMiD Modules, Samsung has suffered damages as a direct and proximate result of Broadcom's illegal tying practices, including by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for OMH LPAMiD Modules for its phones.

### **COUNT 9**

#### **TYING OF GNSS/GPS CHIPS AND LPAMID MODULES IN VIOLATION OF CARTWRIGHT ACT, CAL. BUS. & PROF. CODE §§ 16720, 16727**

159. Samsung incorporates all other allegations in this Complaint into Count 9.

160. The Strategic Agreement imposed an unlawful tying agreement upon Samsung. While the Strategic Agreement does not expressly condition Broadcom's sale of phone GNSS/GPS chips on Samsung's agreement to purchase OMH LPAMiD chips from Broadcom, the terms of the Strategic Agreement (including the Annual Commitment) rendered it commercially unviable for Samsung to purchase Qorvo's or another manufacturer's OMH LPAMiD Modules if it wished to procure phone GNSS/GPS chips from Broadcom.

161. Broadcom's tying arrangement affected a substantial volume of interstate commerce.

162. Broadcom's tying arrangement involved two separate products: phone standalone GNSS/GPS Chips (the tying product) and OMH LPAMiD Modules (the tied product).

163. Broadcom has market power in the tying product as a result of its share of more than 70% in the Global Phone Standalone GNSS/GPS Chip Market.

164. Broadcom forced Samsung to purchase the tied product if it wished to purchase the tying product (or to pay up to the Annual Commitment amount, which in practice forced Samsung to purchase its requirements of the tied product from Broadcom).

165. This tying arrangement created a not insubstantial anticompetitive effect in the market for the tied product.

166. Broadcom's tying arrangement unreasonably restrained trade and harmed competition in the OMH LPAMiD Modules Market in a variety of ways, including: (a) decreasing competitors' abilities to enter into or effectively compete in the market for OMH LPAMiD Modules; (b) enabling Broadcom to extract higher prices for its OMH LPAMiD Modules (which, in turn, raises

the price of smartphones); (c) maintaining Broadcom's market power in the OMH LPAMiD Module Market; and (d) facilitating Broadcom's acquisition of even greater market power in the OMH LPAMiD Module Market.

167. The anticompetitive effects of Broadcom's conduct outweigh any procompetitive benefits; indeed, Broadcom did not, and cannot, allege that its tying arrangement had any procompetitive benefits.

168. In any event, the anticompetitive effects of Broadcom's conduct outweigh any potential procompetitive benefits.

169. As a direct purchaser of OMH LPAMiD Modules, Samsung has suffered damages as a direct and proximate result of Broadcom's illegal tying practices, including by being unable to source components from a lower cost competing supplier, losing profits it would have made, and by means of overcharges for OMH LPAMiD Modules for its phones.

#### **PRAYER FOR RELIEF**

WHEREFORE, Samsung respectfully requests that this Court enter judgment in its favor and against Broadcom:

A. finding that Broadcom has monopolized and/or has attempted to monopolize the relevant markets in violation of Section 2 of the Sherman Act;

B. finding that Broadcom's exclusive dealing arrangements, including the Annual Commitment, "take or pay" provisions, and other anticompetitive terms of the Strategic Agreement entered into by Broadcom with Samsung (and other competitors of Samsung) violate Sections 1 and 2 of the Sherman Act, Section 3 of the Clayton Act, and Sections 16720 and 16727 of the California Business and Professions Code;

C. finding that Broadcom has engaged in unlawful tying in violation of Section 1 of the Sherman Act, Section 3 of the Clayton Act, and Sections 16720 and 16727 of the California Business and Professions Code;

D. awarding Samsung three times its actual damages in an amount to be established at trial, reasonable attorneys' fees, costs, expenses, and such further relief as the Court deems just and proper; and

1 F. permanently enjoining Broadcom and its agents from repeating the anticompetitive  
2 conduct described in this Complaint and providing such other relief as may be appropriate.

3 **JURY DEMAND**

4 Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiff Samsung hereby demands a trial  
5 by jury on all issues so triable.

6 Dated: July 1, 2024

ARNOLD & PORTER KAY SCHOLER LLP

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9 By: /s/ Douglas A. Winthrop  
Douglas A. Winthrop  
Daniel B. Asimow  
Jee Heun Kahng  
Jonathan I. Gleklen (*motion for admission*  
10 *pro hac vice forthcoming*)  
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